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Subjet multiplicities in neutral current deep inelastic ep scattering at the future Electron-Ion Collider

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Studies of the jet substructure and subjet multiplicity in electron-proton neutral current deep inelastic scattering (NC DIS) at the future Electron-Ion Collider (EIC) for $Q^2 > 125 \text{ GeV}^2$ are presented, for three center of mass energies, $\sqrt{s} = 63.2, 104.9$ and 141 GeV .

Data are simulated by using two Monte Carlo event generators PYTHIA 8.304 and RAPGAP 3.308.

Jets and subjets are produced by using longitudinally invariant k_T and anti- k_T cluster algorithms.

Various jet radii are implemented to study the jet substructure and the subjet multiplicity.

The subjet multiplicities are also studied at different values of jet-resolution scale.

Session

Future Experiments and Detector Development

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